SCIENCE & EDUCATION Impact

Benefits from USDA/Land-Grant Partnership

Better Management Yields Results

Timely education reaps producer profits.

Just slight changes in management can make the difference between a bumper and a bust crop. Land-Grant universities and the U.S. Department of Agriculture (USDA) research and extension programs provide reliable and timely information that keeps producers ahead of the curve.

Payoff

- **Variety is the spice of profit.** Wheat growers in **Tennessee** can hedge their bets when deciding what wheat variety to plant. Extension field tests showed which ones provide the highest yields. In Weakly County, 96 percent of the growers reaped 5.5 bushels more per acre and added profits of $12.75 an acre by planting superior varieties. Variety trials in **Idaho,** combined with better weed control and fertilizer management, helped alfalfa growers increase quality by five percent and profits by $67,000. **Kansas** Extension tests found that hybrid corn with pest-fighting genes dramatically increased yields. Pest-resistant hybrids were planted on 330,000 acres in southwest Kansas, increasing profit by $5 per acre or $16.5 million overall. **Texas A&M** researchers developed two new peanut varieties that naturally resist common pests and diseases. One variety, COAN, resists the root-knot nematode and is estimated to save farmers in **Texas, Georgia, Florida** and **Alabama** up to $40 million annually in pesticide costs.

- **Cool water.** Field studies by **California** Extension showed that cotton growers could eliminate one late-season irrigation, reducing water use by four acre-inches a year and saving up to $35 per acre. Splash, an irrigation water management program conducted by **Nebraska** Extension, educates Central Platte Valley growers about innovative irrigation technologies and best management practices. In the past five years, the program has reduced pumping and irrigation costs an average of $9.40 an acre, or an overall savings of $575,000 on 60,000 acres. **Arkansas** rice researchers developed water management practices that reduce a devastating fungus disease, saving $30 an acre in fungicide applications. When combined with two high-yielding rice varieties, growers earn $23 to $45 per acre more in income.

- **How sweet it is.** When carrot production began to move north to **Georgia** five years ago, Extension provided ongoing education to teach growers production techniques suitable to Georgia's mineral soils. Carrot acreage is now 4,000 acres,

RESEARCH, EXTENSION AND EDUCATION AT WORK

SCIENCE & EDUCATION Impact
Benefits from USDA/Land-Grant Partnership

up from 2,800 acres in 1998. Average yields for all growers have increased from 300 bags an acre to more than 500 bags an acre, adding an estimated $14 million to the state's agricultural economy.

- **Beating sugar beet disease.** Since the late 1980s, a number of sugar beet diseases have reduced profits for Montana growers and processors by 10 percent, or $8.4 million a year. **Montana State,** researchers developed new management strategies that Extension shared with growers. The result: losses to these diseases in 1998 and 1999 were cut in half.

- **Computing fruits and nuts.** A software program, Crop Profitability Analysis, developed by **Oregon State** and **Washington State** scientists helps producers of tree fruit and nut crops analyze economic considerations such as orchard replanting or replacement and tree spacing. Nine users of the program reported an average savings of $80,400 each or a total of $723,600.

- **Environmental friendliness can pay off.** Scientists around the country have developed pest control practices to reduce chemical use while maintaining or improving grower profits. These practices, known as Integrated Pest Management or IPM, are being developed in virtually every state. Examples of success abound. **New Hampshire** Extension saved apple growers $450,000 in spraying costs in 1999. In **Mississippi,** where IPM is used on all of the state's 18 acres of greenhouse tomatoes, growers saw a 30 percent yield increase and an additional $828,000 in income. Thanks to IPM, 90 percent of the cotton growers in a four-county area of west **Tennessee** have reduced pesticide use by an average of 30 percent, saving $15 per acre or $2.5 million. Growers of a number of crops in **Delaware** used IPM to reduce pesticide costs: pickling cucumber producers saved $15 an acre, or $75,000; potato farmers reduced fungicide use by $60,000 on 3,000 acres; and watermelon growers cut costs by $12,000 on 400 acres.

- **Pining away. Louisiana State** researchers found that timely weed control in the early stages of developing loblolly pine plantations enhanced tree growth. Growers who spent $90 an acre controlling weeds at the start increased their total revenue by $521 an acre.

- **More crops with the same amount of water.** Researchers at **Colorado State** are changing the face of dryland farming in the state. Traditionally, land planted to wheat one year was left unplanted the following year to allow moisture to build up in the soil. Research showed that an additional crop, such as corn, forage peas or sunflowers, could be planted in the summer. As a result, dryland farmers have converted 890,000 acres from the old wheat-fallow system, bringing a net return of $11 million a year.

- **Targeted spraying.** The notion of "just in time" inventory used by manufacturers has an agricultural counterpart. A Peanut/Cotton Infonet established by **Virginia** Extension alerts peanut growers when conditions call for protection from peanut leaf spot blight. The leaf spot advisory enables growers to eliminate up to three applications of fungicide, for a savings of $20 per acre, or about $2.1 million on 75,000 acres of peanuts.

Cooperative State Research, Education, and Extension Service
United States Department of Agriculture

Cooperative State Research, Education, and Extension Service in cooperation with the Extension Committee on Organization and Policy, the Experiment Station Committee on Organization and Policy, the Academic Programs Committee on Organization and Policy, the International Programs Committee on Organization and Policy, and the Louisiana State University Agricultural Center.

April 2000